21/qs/C

Unnamed Silt Loam 77-Ida-0529

Classification -- medial over loamy, mixed Andeptic Paleboralf, fragipan phase.

General Site Characteristics

Location -- Benewah County, Idaho, northwest ¼ of northeast ¼ of section 23, T. 43 N., R. 3 W., 0.6 miles south on Highway 95A from Palouse Divide Road, upslope 150 yards, 100 yards up from roadcut; described -- October 27, 1977, by M. A. Fosberg, N. Parrott, A. Falen, D. Hall; topography -- mountain foothills, secondary ridge, smooth straight topography, sideslope, midslope, convex microrelief; slope -- 18 percent; aspect -- southeast 165 degrees; elevation -- 3450 feet; parent material -- Mazama volcanic ash over Palouse loess over siltites of the Libby Formation; climate -- subhumid, with cool dry summers and cool wet winters, estimated mean annual precipitation of 35-40 inches with 2 to 6 feet of snow accumulation, estimated mean annual air temperature of 44°F; drainage -- moderately well drained; runoff -- slight; permeability -- very slow; ground water -- perched water table in spring of year; vegetation or use -- timber and grazing, Thuja plicata/Pachistima myrsinites habitat type with Larix occidentalis, Abies grandis, Pinus monticola, Taxus brevifolia, Linnaea Borealis, Coptis occidentalis, Smilacena stellata, Viola glabella, Chimaphila umbellata.

Remarks: This site is stand #11 of the Douglas Fir Tussock Moth Study from the Coll. of FWR, University of Idaho.

Pedon Description

O1 6.3-3.8 centimeters (2.5-1.5 inches). Partially decomposed leaves, needles, and twigs.

O1 3.8-0 centimeters (1.5-0 inches). Well decomposed organic matter.

B21ir 0-15 centimeters (0-6 inches). Yellowish brown (10YR 5/4) silt loam, dark brown (10YR 3/3) moist; moderate fine granular structure; weakly coherent, very friable, nonsticky and slightly plastic; many very fine, few fine and medium pores; abundant very fine and fine roots; clear smooth boundary.

B22ir 15-30 centimeters (6-12 inches). Light yellowish brown (10YR 6/4) silt, yellowish brown (10YR 5/6) moist; weak medium granular structure; weakly coherent, very friable, nonsticky and slightly plastic; many very fine, few fine and medium pores; abundant very fine, plentiful fine and medium roots; clear smooth boundary.

Unnamed Silt Loam 77-Ida-0529 (cont.)

B23ir 30-40 centimeters (12-16 inches). Light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak medium granular structure; weakly coherent, very friable, nonsticky and slightly plastic; roots and pores as above; clear smooth boundary.

IIB24 40-60 centimeters (16-24 inches). Pale brown (10YR 6/3.4) silt loam, brown (10YR 4.8/3) moist; weak medium to coarse subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few thin clay films lining pores; many very fine, common fine, and few medium pores; plentiful very fine and fine, few medium roots; clear smooth boundary.

IIA2 60-73 centimeters (24-29 inches). Very pale brown (10YR 7/3.5) silt loam, dark yellowish brown (10YR 4/4) moist; massive structure; hard, firm, slightly sticky and slightly plastic; roots and pores as above; very few fine and medium gravels; clear smooth boundary.

IIIA&Btb 73-93 centimeters (29-37 inches). Very pale brown (10YR 7/4) silt loam matrix, yellowish brown (10YR 5/4) moist, with yellowish red (5YR 5/8) silt loam included peds, strong brown (7.5YR 5/6) moist; moderate medium to coarse subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common, thin clay films lining pores; many very fine and fine, few medium pores; abundant very fine, plentiful fine, and few medium roots; clear wavy boundary.

IIIBtb&A 93-120 centimeters (37-48 inches). Reddish yellow (7.5YR 6/6) silt loam peds, strong brown (7.5YR 5/6) moist, surrounded by tongues and interfingers of very pale brown (10YR 7/3) silt loam, yellowish brown (10YR 5/6) moist; weak medium to coarse prismatic parting to moderate medium to coarse angular blocky structure; very hard, very firm, slightly sticky and slightly plastic; many moderately thick, yellowish red (5YR 5/8) clay films; many very fine and common fine pores; very fine to medium roots confined to prism faces and A2 material; A2 material developed along prism faces dispersing into blocky faces; few very fine to medium strongly weathered, soft siltite gravels throughout horizon; gradual wavy boundary.

IIIBxtb 120-155+ centimeters (48-62+ inches). Strong brown (7.5YR 5/6) silt loam peds, yellowish red (5YR 4/8) moist, with tongues and interfingers of very pale brown (10YR 7/3) silt loam, pale brown (10YR 6/3) moist; moderate coarse prismatic parting to moderate, coarse angular blocky structure; very hard (brittle), very firm, slightly sticky and slightly plastic; many thin clay films lining pores, common moderately thick clay films on prism

Unnamed Silt Loam 77-Ida-0529 (cont.)

faces; roots and pores as above; tongues are 1 to 1½ inches diameter vertical to slightly oblique, few, strongly weathered, soft siltite gravels throughout.

Remarks: The A2 horizon formed after deposition of surface parent material by lateral moving water; therefore, it is not a part of the buried soil and b is not used.

Pedon: 21/qs/C
Unnamed Silt Loam 77-Ida-0529

Date: July 1978

| Sample No. | Horizon | Depth | pH paste | ECX10$^3$ | PW at Saturation | Available P | Sesquioxides Di-Citrate Fe | Sesquioxides Extract Al | Sesquioxides Pyrophosphate Fe | Sesquioxides Extract Al |
|---|---|---|---|---|---|---|---|---|---|---|
| | | cm | | mmhos/cm | % | ppm | % | | | |
| 1 | 01 | 6.3-3.8 | - | - | - | - | | | | |
| 2 | 02 | 3.8-0 | - | - | - | - | | | | |
| 3 | B21ir | 0-15 | 6.0 | 0.1 | 72 | 0.9 | | | | |
| 4 | B22ir | 15-30 | 6.4 | <0.1 | 75 | 0.7 | | | | |
| 5 | B23ir | 30-40 | 6.4 | <0.1 | 75 | 1.0 | | | | |
| 6 | IIB24 | 40-60 | 6.4 | 0.1 | 52 | 0.3 | | | | |
| 7 | IIA2 | 60-73 | 5.6 | 0.1 | 30 | 0.2 | | | | |
| 8 | IIIA&Btb | 73-93 | 5.2 | <0.1 | 34 | 0.0 | | | | |
| 9 | IIIBtb&A | 93-120 | 6.0 | 0.1 | 33 | 0.4 | | | | |
| 10 | IIIBxtb | 120-155+ | 5.2 | 0.1 | 32 | 0.3 | | | | |

| Sample No. | Exchangeable Ions Ca | Mg | Na | K | Ext. Acidity H | CEC | Base Saturation | OM | C | N | C:N | Soil Fraction | NaF pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | meq/100 gms | | | | | | % | % | | | ratio | | |
| 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 6.7 | 0.8 | 0.0 | 0.7 | 16.7 | 19.6 | 33 | 2.8 | 1.6 | 0.12 | 13 | 1.00 | 10.7 |
| 4 | 4.7 | 0.7 | 0.1 | 0.6 | 16.7 | 18.6 | 27 | 2.0 | 1.2 | 0.08 | 15 | 1.00 | 10.8 |
| 5 | 3.2 | 0.7 | 0.0 | 0.5 | 14.4 | 13.8 | 23 | 1.3 | 0.8 | 0.06 | 13 | 1.00 | 10.7 |
| 6 | 2.7 | 0.8 | 0.1 | 0.4 | 8.3 | 9.6 | 33 | 0.7 | 0.4 | 0.04 | 10 | 1.00 | 10.4 |
| 7 | 2.2 | 1.3 | 0.0 | 0.2 | 6.2 | 7.5 | 37 | 0.4 | 0.2 | 0.03 | 7 | 1.00 | 9.2 |
| 8 | 1.8 | 2.8 | 0.1 | 0.2 | 9.4 | 12.1 | 34 | 0.4 | 0.2 | 0.02 | 10 | 1.00 | 9.3 |
| 9 | 0.9 | 1.2 | 0.1 | 0.1 | 12.0 | 10.0 | 16 | 0.4 | 0.2 | 0.03 | 7 | 1.00 | 8.9 |
| 10 | 1.7 | 1.7 | 0.2 | 0.1 | 12.1 | 12.3 | 23 | 0.3 | 0.2 | 0.03 | 7 | 1.00 | 8.9 |

Remarks: CECs leached with 10% acidified NaCl.
Nitrogens and CECs ran on the Technicon.

Analysis by: Nancy Parrott

Pedon: 21/qs/C
Unnamed Silt Loam 77-Ida-0529

Date: August 1978

| Depth | Particle Size Distribution (mm) VCS 2-1.0 | CS 1-0.5 | MS 0.5-0.25 | FS 0.25-0.1 | VFS 0.1-0.05 | TS 2-0.05 | TSi 0.05-0.002 | TC < 0.002 | Gravel & Stone > 2 mm wt. | vol. | Textural Classes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| cm | % | | | | | | | | % | | |
| 6.3-3.8 | - | - | - | - | - | - | - | - | - | - | - |
| 3.8-0 | - | - | - | - | - | - | - | - | - | - | - |
| 0-15 | 1.02 | 1.05 | 0.56 | 1.94 | 8.64 | 13.22 | 79.09 | 7.70 | none | none | Silt loam |
| 15-30 | 0.08 | 0.26 | 0.24 | 1.51 | 9.80 | 11.88 | 81.46 | 6.66 | none | none | Silt |
| 30-40 | 0.12 | 0.35 | 0.35 | 2.15 | 14.17 | 17.14 | 77.29 | 5.57 | none | none | Silt loam |
| 40-60 | 0.27 | 0.70 | 0.73 | 3.12 | 10.12 | 14.94 | 76.36 | 8.70 | none | none | Silt loam |
| 60-73 | 0.68 | 0.70 | 0.68 | 2.88 | 10.09 | 15.03 | 71.29 | 13.69 | none | none | Silt loam |
| 73-93 | 0.59 | 0.80 | 0.60 | 2.22 | 9.40 | 13.60 | 70.30 | 16.09 | none | none | Silt loam |
| 93-120 | 0.64 | 0.86 | 0.76 | 2.70 | 11.72 | 16.67 | 66.92 | 16.41 | none | none | Silt loam |
| 120-155+ | 1.13 | 0.99 | 0.78 | 2.89 | 9.35 | 15.14 | 62.85 | 22.02 | none | none | Silt loam |

| Depth | Silt Size Distribution (mm) CoSi 0.05-0.02 | MSi 0.02-0.005 | FSi 0.005-0.002 | Bulk Density | Water Content 1/3 Bar | 15 Bar | Liquid Limit | Plastic Limit | Plastic Index |
|---|---|---|---|---|---|---|---|---|---|
| cm | % | | | g/cc | % | | % | | |
| 6.3-3.8 | | | | - | - | - | - | - | - |
| 3.8-0 | | | | - | - | - | - | - | - |
| 0-15 | | | | No clods | 46.7 | 20.4 | NDNP | NDNP | NDNP |
| 15-30 | | | | 0.8 | 58.6 | 21.2 | NDNP | NDNP | NDNP |
| 30-40 | | | | No clods | 48.3 | 16.3 | NDNP | NDNP | NDNP |
| 40-60 | | | | 1.6 | 42.3 | 7.3 | NDNP | NDNP | NDNP |
| 60-73 | | | | 1.6 | 25.8 | 4.9 | NDNP | NDNP | NDNP |
| 73-93 | | | | 1.7 | 28.2 | 7.9 | 24 | 20 | 4 |
| 93-120 | | | | 1.7 | 26.5 | 7.1 | 25 | 21 | 4 |
| 120-155+ | | | | 1.8 | 27.4 | 8.6 | 26 | 19 | 7 |

Remarks: Centrifuge method, 5% sodium hexametaphosphate added, sonified.

Analysis by: A. Falen
N. Parrott - Atterberg